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Man and Nature.

(Concluded from page 158.)

The working of the English coal mines is wonderful, not only in the depths reached, but in the vast extent of many of them, and the admirable provisions made for their ventilation. In some of the Northumberland collieries—these being earliest in date, as well as most extensive—the ventilating blast of air forced down one shaft is made to circulate through thirty or forty miles of subterranean workings before emerging again at another. Well might we wish that a better security could thus, or otherwise, be given against those explosions of fire-damp, which every year, from casualty or carelessness, offer such fearful records of calamity!

The deepest coal mine worked in Great Britain is that of Duckinfield in Cheshire, reaching 2,050 feet, or more than a third of a mile, in its perpendicular depth. But possibly the nearest approach to the centre of the earth—if we may thus speak of a fractional part hardly exceeding $\frac{1}{12000}$ of the actual distance—is that of a coal mine close to the sea at Wearmouth, descending, we believe, about 1,800 feet below the sea-level. This depth is recorded not only by the great barometric pressure, but by the increasing temperature in coming nearer the central heat of the globe. Here indeed we must note one of the most serious obstacles to further penetration downwards. It is now well known, from observations in mines and artesian wells, that the increase of heat below what may be called the stationary line of temperature, is at the rate of 1° of Fahrenheit for every 60 or 65 feet of increasing depth. In several deep copper and coal mines the average heat of the lowest workings reaches 80° to 85°; and one instance, in the Poldice Mine, is noted by — Fox, an eminent authority on this subject, where the thermometer rose to nearly 100°; a temperature incompatible with any form of profitable or even possible human labour.

It may seem a small matter to speculate upon, and yet when speaking of changes effected on the earth by human action, we cannot discard the effects of 40 or 50 million tons of coal burnt every year upon the English soil on which we are living. It is the translation, from *within* the earth to *without*, of this enormous amount of carbonaceous matter, with its various chemical adjuncts. Though not well able to say how all this is disposed of in its various later combinations, we may at least affirm that a substance like carbon, so large a constituent of life in all its forms, and having such endless relations to other chemical elements, cannot be wholly inert in the addition it thus makes to the surface without. This is one of the cases, where eventual effects may differ from, and go beyond, those more directly obvious to the eye.

Such is a mere outline of the changes, taking our own country as the example, which man, as a miner, is bringing about on the earth. A still stronger impress of genius and power is that which is presented by the great railways which now so largely traverse its surface; and by the tunnels, embankments, viaducts and bridges, which contribute to this vast scheme of human intercommunication. Though a generation has scarcely past by since these works were begun, they are already so familiar to us, that we lose the full sense of their grandeur, and of all they denote of progress in the condition of mankind. Yet how strange the alteration, even to the eye, in the aspect of a country traversed and intersected by these lines of iron-road;—vacant and still at one moment, a minute afterwards giving passage to a train, rushing along at the rate of thirty, forty, or fifty miles in the hour, laden with human beings and the commodities of the world. We know no spectacle more striking—appalling we might almost call it—than that of an express train thus sweeping by in its course. Accustomed as we are to see traction performed by animal labour, there is a peculiar strangeness in witnessing this wonderful work done without any agent obvious to the eye. We know that the power is in the locomotive, but the *mode* of action is unseen, and to most people unknown.

It would be needless to dwell on those statistical facts as to railroads, in England and elsewhere, which are every year pressed upon us in larger figures and more ample details;—the amount of capital invested, the length of roads made, the number of miles run, the number of passengers and tonnage of goods conveyed, and the gross and net profits of the whole. But we may well look for a moment at some of those astonishing works to which we have alluded, as created by this change in the locomotion of the world;—works in which man has attained a higher mastery over nature than even the boldest imagination ever before suggested. Take bridges as an example. In our own boyhood, we were shown the iron arch over the Wear at Sunderland as one of the wonders of England; a structure which the modern tourist would hardly halt to look upon. The Suspension Bridge over the Menai came next; a bold and beautiful work, but adapted only to the old system of mail-coach roads. With the invention of the railway, and steam locomotion, came the Tubular Bridge over the same strait, a work of less beauty, but more wonderful in its dimensions, and in the new and singular principle of construction due to Fairbairn, of which it was the first example. Its success emboldened Stephenson to undertake that far greater work, the Tubular Bridge of Montreal, little less than two miles in length, and stretching across the wide waters of the St. Lawrence, hardly yet calmed from their rush down the rapids of Lachine. As a monument of grand engineering this bridge is not likely to be surpassed;—the less likely as its benefit to the shareholders is far from being commensurate to the cost. Another triumph of human power on the same river is the Suspension railway bridge of Niagara, scarcely two miles below the great falls; where the St. Lawrence, rushing impetuously, rather than flowing, through a deep ravine, is spanned over in mid air by this bridge, uniting the dominions of Canada and the United States. In another and distant region of England's power, the East Indian railways show some works of this kind (as the great bridge across the Jumna,) almost rivalling those of the western world.

Look further at those admirable constructions, both in Europe and America, by which the railroad is carried across mountain chains, climbing tortuously their steep acclivities, or forced by tunnels through the rock. In the Copiapo Railway of Chili, the locomotive carries its train 4,070 feet above the sea. In the several railroads which cross the Alleghany Mountains, the summit levels are from 2,000 to 3,000 feet. The new Empire of Brazil boasts a work of similar kind, just completed. In the section, now open, of the St. Ander railroad in Spain, an elevation is reached of 2,524 feet. The Sommering Pass, between Vienna and Gratz, carries the traveller 3,000 feet above the sea. Tunnels from two to three miles in length are familiar to us in England and elsewhere. That which is now in progress under Mount Cenis has for its object and ambition to win a passage into Italy without crossing the Alps. To the modern engineer the phrase of the poet—

"Opposuit natura Alpemque nivemque"

comes as an incentive rather than an admonition. It is probable that this object will eventually be accomplished. But is it worth the accomplishment? We, as old Italian travellers, think not. We can hardly desire, indeed, to fall back upon the time when carriages were taken to pieces for a passage over these mountains. But, on the other hand, we do not desire to exchange the grandeur of a great Alpine pass, and those glories of the first view of Italy which gave exultation to Hannibal and his army, for the sullen darkness of a tunnel, distinguishable in nothing but its wearisome length from those of our English midland counties. The engineer gains a lasting fame from his work. The traveller gains a few hours of time upon his journey, and emerges into Italy through a hole in a rock!

It may seem ungracious, as well as irrational, to throw even a shade of doubt on the advantages which railways have rendered to mankind. The magnitude of the benefits derived from this great conquest over time and space in the natural world, is too obvious to be seriously impugned. Commerce, manufacture, and agriculture gain universally by the change effected; and the social relations of mankind are enlarged at least, and perhaps improved. But we must admit some few qualifications to this high estimate. Even the traveller does not gain his good without alloy. We quit our homes to see and learn—to gain fresh health and enjoyment—often, it must be owned

to follow fashion or relieve *ennui*. For all these objects the railway affords facilities before unknown, but almost too great for the worthiest purposes of travel. European tourists, now in number *legion*, are hurried from place to place with unwholesome and unprofitable speed—the slaves of trains and time-tables, and imbued with more vivid recollections of stations and crowded hotels than of countries traversed and cities past through. In many persons, it must be added, a habit of restless hurry and love of change is thus engendered, injurious in other ways to the well-being of life. These, however, we admit to be exceptional evils, and name them only as such. We are bound to be thankful for inventions of human genius, which can carry us in a short day from metropolitan streets and offices to mountains, lakes, and waterfalls; which bring Mont Blanc and Rome within a month's holiday; and enable the scientific traveller to reach the scene of his labours, with less exhaustion of the various appliances of research.

The Electric Telegraph, that close associate and guardian of the railway, has not made such marked changes on the outer face of the earth; but may, nevertheless, be mentioned here, as the most marvellous example of the dominion man has gained over one of the great elements of nature—an element, moreover, scarcely known as such one hundred and fifty years ago. The power we exercise over heat and light, over chemical and mechanical forces, is limited in space. The electric current—or what, in default of better knowledge, we denominate such—is made to career, with speed hardly translateable into numbers, over continents and underneath seas, performing the behests of man in social life, in commerce, in peace, and in war. It is the very element of lightning—the *vis flammea cœli*—converted into a messenger, or even, by more recent inventions, into a *disciplined writer* of human thought and language. We might bring in some qualifications here also, as to the utility of this new agent of human intercourse; but our space prevents us saying more of what must, doubtless, be counted the most wonderful discovery of our own time.

Canals, though of high antiquity as an invention for transport, have been in great measure superseded by railways. Yet there are two works of this kind—one in contemplation, the other partially effected—which derive interest from their magnitude, and from their connexion with the new dominion which steam has given to man over the oceans of the globe. If the Atlantic be ever united to the Pacific, and the Mediterranean to the Red Sea and Indian Ocean, by ship canals, all will be done that can be done, to give speed and certainty to the great circuits of intercourse round the globe. We offer no present opinion on the much-disputed matter of the Suez Canal. Even if successful as a navigable passage across the Isthmus, there yet remains the question of profitable return,—one embracing too many contingencies to be settled by anticipation. A few years will determine both these points now standing at issue.

Selected for "The Friend."

A loving salutation to all Friends every where in this great day of trial, to stand faithful unto God over all sufferings.

It hath been upon my heart when in the sweet repose of the streams of my Father's love and life, by which my heart, soul and spirit, have been overcome, to visit you with a loving salutation from the place of my outward bonds and imprisonment for the gospel sake.

O come, my dear lambs and dear babes, it is a time for us to flock together into our Father's fold, and to get into his tent of safety, and to lie down in the arms of his dear love, and to be covered with the wing of his power, now the wild boar of the forest is abroad to make his prey, and the wolfish devourers are seeking to scatter the sheep of the Lord's pasture. Oh let us feel and know the safe harbour in which alone is safety, whilst the boisterous storms and tempests are all about us, and the foaming rage of the troubled seas are casting up their waves one after another.

Oh dear lambs and babes of God, our Rock is sure and steadfast, our Refuge and Harbor safe and unmoveable, and our Pilot wise and exceeding skilful; there is not a danger near that can attend us in our voyage to our everlasting land of rest, but he doth foresee, and knows right well how to avoid them all—he never failed any that trusted in him, and in the arm of his salvation—may we all stand fast, and quit ourselves like men, and be strong in the power of his might.

Oh dear lambs! we have a great portion; for I can say in the secret of my soul, the Lord is my portion, and hath been and is yours also, who have waited for him, and in whom is your delight.

Oh! in the love and life of the Lamb, look over all weakness in one another, as God doth look over all the weakness in every one of us, and doth love us for his own Son's sake—in so doing peace will abound in our borders, it will flow forth among us like a river, it will keep out jars, strifes, and contentions from us, and so we shall be kept as a beautiful and amiable family, and in the order of God.

These few lines do manifest something that was upon my heart towards you in the feelings of my Father's love, as I lay in my bed in the night season this 11th of the Ninth month, 1662.

WILLIAM BREND.

Newgate Prison in London.

Condensed Milk.

The following account of the manufacture of condensed milk, an article which though brought into use within a comparatively few years, is now produced on a large scale in certain neighbourhoods, is taken from a statement in the New York *Tribune*. The establishment alluded to is located at Wassaic, on the Harlem Railroad, 85 miles above New York city. Besides this factory it is stated there are four or five others in operation—one at Brewsters Station, also on the Harlem Railroad, one at Winsted, Conn., one at York, Penna., one in Maine and two in Massachusetts.

The company have this year contracts with somewhat over fifty farmers for the daily delivery of 10,000 quarts of milk, six days in the week, at three cents a quart. It is required to be carefully strained and thoroughly cooled upon the farm by ice or cold spring water, some hours before it is hauled to the factory, because it will injure in close cans if carried while it contains any animal heat. There are two receiving vats outside of the factory, under sheds, where the wagoners drive up and place the cans upon platforms. Here the first process in the purification commences. Each can is examined by the taster, who has acquired the same degree of skill that custom-house liquor-tasters have, and which enables him to determine whether the milk is sweet, or has been "extended" at the spring.

If the cans "pass muster," they are immediately emptied through a fine cloth or strainer into the receiving vat, which holds a thousand quarts. From that the milk flows through a pipe, and is drawn into brass pails which hold fifty quarts each. These stand in a flat tub capable of holding sixteen of the pails at once, which is filled with water that is heated by a coil of steam pipe. Here the milk is heated to 190° or 195°, and in this first process of the work of condensing lies the whole secret of success. This was the discovery of — Borden. He was not the originator of condensed milk. It had been thought of and processes patented before the date of his patent, but all had failed, because the albumen of the milk, if boiled in open kettles, burnt upon the bottom, and if *in vacuo*, coated the pipes and vessel, preventing perfect condensation, and, if heated too high, giving an unpleasant odor to the condensed milk. When thus cooked upon the inside of the condenser, the albumen became an insoluble cement, which required great labour to remove, and which, if not removed, would spoil the next charge.

In this water bath, in these open pails, the albumen is coagulated, without separation from the watery portion of the milk, and a little portion that adheres to the pail is almost instantly removed by placing the pail bottom up over a steam jet, instantly followed by a strong water jet, in the same way that the farmers' cans are so perfectly cleansed. Until this plan was adopted, the work of cleaning off the coagulated albumen was very laborious. Now it is almost instantaneous.

This first process requires but a few minutes, and two men stand ready to hook a tackle to the pails as fast as the contents reach the proper temperature, and hoist them out of the bath and empty them through a fine brass wire-gauze sieve into what is termed a "steam well." This is a copper vessel shaped like an egg, standing on end, with about one-fourth of the upper end cut off. This holds about seven hundred and fifty quarts—six and a quarter barrels. This well is made with a steam jacket over the lower end, so that the milk, which is already heated almost to the boiling point, is soon brought to that degree, and is then ready to go to the condenser.

This first boiling in the open kettle appears to be another of the requisites in the preparation for the final operation, as it gets rid of something in the milk that tends to make it foam in the boiler; and if there is any defect in the condition of the milk, it is exhibited here in this open kettle, and the deposit of albumen that takes place during the first boiling is easily seen and cleaned off between the changes. There are two of these steam wells, with their accompanying water baths and receiving platforms. From these the milk is taken by what is generally termed suction, through tinned iron pipes, to the floor above, where there are three condensers, or vacuum pans. These in form are somewhat like the steam well, the egg shape being complete—being four by five feet in diameter, and holding one thousand quarts. In the upper part on one side, there is a window, through which strong sunlight, or lamplight, is reflected to the bottom, and opposite this there is an eye-glass, through which all the movements of the milk are seen, and by that means the boiling is regulated. There is also a man-hole, through which a man enters after each charge is withdrawn, and scrubs the copper bright enough to almost see his face in it. The lid of the man-hole being screwed on, the pan is ready to commence receiving a charge. The first operation is to start a powerful double-action air-pump, which exhausts the air in the vacuum pan until the gauge shows twenty to twenty-five inches.

The cock in the pipe connected with the steam-well is now opened, and the milk rushes up to fill the vacuum. This pipe, by the by, is inserted into the milk from the top, and does not extend quite to the bottom, so that if any sedimentary

matter has accumulated there from the boiling, it is not taken up to the condenser. As soon as the first charge is drawn up, more milk is prepared ready in the well for the next demand. The steam is now let on, heating the coil of pipe inside, and the steam jacket outside of the condenser, the pumps being kept in continual operation, and the milk closely observed by the intelligent Yankee girl, one of whom has charge of each pan, and prides herself in keeping it and all around as neat as she does her person, and all are faultless. In a few minutes she observes the thermometer indicates 190°, and that the milk *in vacuo* is boiling rapidly. In open air at this elevation it would require 210°, and could not have eighty per cent. of the water it contains removed, as in the case of the condenser.

As the boiling goes on, the milk continues to flow in, until 3,200 quarts have been taken up. Then the cock of the supply pipe is closed, and from this time the most watchful care of the attendant is required to keep the heat regular, and the pumps working perfectly.

The pumps stand upon the lower floor, where a stream of cold water flows upon the air chamber, and condenses the steam vapor drawn from the boiling milk into water, which is discharged into a stream constantly flowing through the building. This condensed vapor constantly emits that peculiar odor that we perceive in milk warm from the cow, or during the operation of boiling, and which contains the germ of putrefaction.

When the charge of 3,200 quarts shows by the gauge that it has been reduced to 800 quarts, it is ready for the final operation of purification. The steam is shut off, and its place filled with cold water, the singular effect of which is to instantly increase the heat of the milk to a very high degree. This is called superheating, and the effect is to throw off all the remaining odor, through the discharge of the pumps. This often has such a fetid, sickening smell, that it pervades the atmosphere all around.

From the time the milk is received from the wagons until it is finished in the condenser, about three and a half hours are required for all the operations.

The milk thus concentrated, is a thick creamy looking substance of the consistence of molasses, and meets with a ready sale in New York city; where it is served to consumers at the rate of thirty-two cents a quart. After being drawn from the condensers it is exposed in ordinary milk cans in an ice bath in a lower room, for an hour and a-half, or until perfectly cold, when it is ready for shipment. In summer, it is kept cold during the transit by means of a large tin tube, filled with ice, firmly inserted in the centre of the can. Milk obtained from the cow in the morning, and condensed and cooled during the day, is ready for shipment by night, delivered at the doors of the customers early the next morning. The addition of four quarts of water to one of this concentrated article, reduces it again to the condition of ordinary milk.

In order, however, to preserve it for a considerable time, it is necessary to subject to another process in which advantage is taken of the preservative power of sugar. Pure sugar is emptied by the barrel full into large reservoirs, and boiling milk poured upon it until it is dissolved, when it is again strained, drawn up into the vacuum pan, and again evaporated. When brought to the proper consistence, it is transferred to the ice bath in the packing-room, and put into cans furnished with suitable outlets similar to those called molasses gates, through which the syrupy liquid is allowed to run into tin cans made to hold exactly one pound each. These cans, when filled, are covered with the small circular pieces of tin which serve as lids, a few drops of solder are run around the joint, and a little of the melted metal put upon the hole left in the lid for the escape of remaining moisture, and the package is hermetically sealed and ready for transportation to any distance. The cans are made in a shop on the premises, and carpenters belonging to the establishment provide the packing boxes, so that the whole work from the reception of the milk to its shipment to market is done under the same supervision. The building stands upon the edge of the railroad, so that all unnecessary transportation is avoided.

For "The Friend."

Musings and Memories.

INCONSISTENCY.

It has been well said, that a liar has need of a good memory, and he who makes false pretences, has not only need of a good memory, but of a good judgment also, or he will infallibly betray himself. The plain, simple, honest truth, is that, which if we keep to it, will preserve us from contradicting ourselves, or involving ourselves in absurdities.

During the Revolutionary war, whilst the English General Howe was advancing towards Philadelphia, his Hessians were one day busy in taking the honey out of some bee hives which they found in the garden of a Presbyterian farmer by the name of Dunwoody. They do not appear to have disturbed the family, who probably had left the habitation, except the owner, who had secreted himself in some elevated spot where he thought he should not be discovered, as they passed by. Finding they were among his bees, he peeped at them, and was so much astonished to perceive them coolly taking out the comb and devouring it, in spite of the stings of the irritated little creatures, that he forgot his caution, and continued gazing until one of them discovered him. A peremptory order to come down or they would shoot him, soon caused his descent. He was carried before Howe. Knowing that the Society of Friends were opposed to war, and supposing that one of its members would receive more mercy at the hands of the English general than others, he determined to pass himself off as one. But he did not know how to act out the character he intended to assume. With hat in hand, he approached Howe, and when questioned as to who he was, replied, "I am a Quaker, sir." Howe saw through the man's scheme at once, and with assumed harshness he again questioned, "What are you?" "I am a Quaker, sir." Howe instantly added, "Guards, here take this fellow and hang him, for he is the first *Quaker sir*, I ever saw." The guards perceived that Howe was not in earnest, and they stood still quietly waiting the end. Dunwoody, who thought he was certainly to die, concluded the sooner he was out of his great fear the better, and said if he was to be hanged he would like them to do it quickly. Howe having given him a hearty fright for his flimsy subterfuge, said "No! I guess you are an honest farmer," and directed the soldiers to let him go.

We can well understand how plainly the man's actions and speech contradicted the character he claimed. But gentle reader, member of the Society of Friends, look around, first at thyself, and after that at thy companions; art thou not, and are not many of thy brethren, nay even many of the sisters in religious profession with thee, nothing better than "Quaker sirs!" Suppose thou or they were called before a military general; life and death, liberty or imprisonment, depending upon being taken for members amongst Friends, what evidence would your dress or your address, your whole outward appearance and demeanor, furnish that you were the genuine descendants, spiritually, of Fox, Churchman and Woolman, simple hearted followers of the Lord Jesus Christ, whose whole garb bespoke they were not under bondage to the god of this world and his fashionable tyranny. Just consider the case. Could you blame him if to your plea of being a Quaker, he should demur and say, I see no evidence or likelihood of this being the truth. Could you wonder if he should say, "Here guards, hang this hypocrite."

I remember a valuable Friend, not long since gathered to his heavenly home, to receive the reward through mercy, of a long dedication to the service of his dear Saviour, saying that when on a religious visit in Ohio, a tavern keeper told him some young Quakers had been there on a spree. Ah, he said, they were "Quaker sirs." They might be members, but they were not bearing the cross of our Lord Jesus Christ, submission to which only can make a true Quaker.

Oh how often, when appearing before those in authority, on behalf of members, in these times of draft and conscription, we have been sorrowfully affected at finding so many of them mere "Quaker sirs." No consistency, in walk or appearance. The officers have generally taken our word for their membership, but the whole evidence furnished by their appearance has been at direct variance with our testimony. Oh that the children of this people did but feel the obligation of the cross,—did but understand the force of the apostle's language, "if any man love the world, the love of the Father is not in him.' Oh for a holy conformity to the plainness, the simplicity, the loving modesty and unflinching faithfulness called for by our profession.

STEALING BITTER PLUMS.

I have read of a gardener in England who had a large plum tree, which in the autumn of the year kept on a covering of bright green leaves, when those on the other trees bearing fruit, were generally yellow or brown with decay. Its fruit did not attain the dark rich purple which would indicate its maturity, until late in the Tenth month. At that season of the year the plum tree, with its leaves and fruit, was a beautiful sight, and particularly captivating to lads who have little principle or honesty, and great love of plums. Two boys, who resided in the neighbourhood of the garden in which the plum tree grew, determined to have a share of its promising looking crop, so one day when the gardener was known to be away on some professional business, with great risk they climbed over the high wall into the enclosure, and making their way up the tree, immediately commenced filling their pockets, and then their caps, with the fruit. Whilst they were thus busily engaged, the gardener unexpectedly returned, and there being a small door into the lower part of his premises, he let himself therein, and an honest little boy, who wished to see and examine, with the owner's permission, this fine-looking fruit-laden tree. As they were passing quietly along the garden walks, they heard the two young thieves in the tree, and pausing for awhile, they watched their proceedings. Soon, having perhaps filled every place of carriage to their satisfaction, they commenced eating. No sooner did one of them take a bite of the luscious looking fruit than a sad change came over his countenance. The plum was hard, sour and bitter withal. Intense disappointment or some other unexplained cause so affected him, that he lost his hold on the tree, and fell, fruit and all, to the

ground, which was soft, or he had without doubt sustained a serious injury. The owner of the lot had hold of him before he could rise, and his equally disappointed companion was obliged to descend. Very rueful were the faces they made over the bitter plums when they first tasted them, but there was terror in their looks as they found themselves prisoners in the hands of him whose garden they had been robbing.

The gardener gave them a lesson on honesty, and after assuring them that they would find the most promising fruit of sin turn out in the end but bitter plums, and making them promise to refrain thereafter from stealing, he let them go. How often has the lover of sinful pleasure found out, even in this life, its bitterness. But what is the anguish of a few years of earthly misery, compared to the eternal bitterness which is the fruit of unrepented sin. Touch not that glass, young man; to the desiring eye there may be a strange beauty in the sparkling spirit; to the demoralized smell, a captivating odor in those nauseous fumes, wherein whiskey and tobacco seem mingled; but depend upon it, very bitter to thee and to thine, will be the fruit of the partaking thereof. So will the end be, of the partakers of anything of which the Spirit of Truth bids thee beware. The indulgence in the fashions, the friendships, the frivolous amusements of the world, all bear bitter fruit. Very desirable often to the unsanctified heart, very pleasant to the depraved appetite they appear, but remember they will prove to thee bitterness, aye, very bitterness of soul.

The Sinks in Florida.—There are agencies working gradually but substantially, to undermine the constitution of Florida, the rich southernmost peninsula of the confederacy, more effectually than "secession." Alarmists might even hold that if the civil war should last many years longer, the ultimate fate of the devoted State will cease to be a mere political question. The most dangerous enemies of the soil of Florida are what the inhabitants call "sinks." Those absorptions of the earth, though on a small scale, are in fact so numerous, that one may almost ask: Is Florida slipping between the fingers of both Federals and Confederates? and will she ultimately, like those high mountains of the Andes during the earthquake of Chili in 1646, vanish entirely from the surface of the earth? All over the country I found, when in that sinking State, sinks of all sizes, forms and ages. Some are slight saucer-like depressions; others, still deeper, like basins, of from twenty to eighty yards across; or only uneven slopes and hollows, which would pass unnoticed were one not informed that the land just there had been "sinking" since such a time, or that an old inhabitant remembered a dead level where now there are various dells, crowded with vegetation. Sometimes—and these are most remarkable—the sinks are round and even like wells, which, indeed, one might suppose them to be, so regular and perpendicular are their walls. Some of these are formed suddenly, during or after heavy rains, and are the result of one storm. They are sunk perhaps in an hour, in a night, without sign or warning, in the middle of the road, or in a cattle-pen. On one plantation I know of several such sinks. One is about thirty feet deep, and eight or nine across; another is twenty feet deep, and about four across the mouth. Sometimes it is not possible to distinguish the real bottom of the sink, for after the sink has been washed down to a certain distance, leaving a smooth regular hole, jagged rocks are laid bare, and the opening to a subterranean passage, it may be of vast length and depth, is exposed. Many accidents, as will be imagined, have occurred from the opening of these sudden cavities when persons have been travelling on dark nights, and passing as they supposed, over an even and well known path. Generally, however, a significant crack in the ground appears as an admonitory warning, and it is not unusual to hear a person say, in pointing to a certain spot, "There will be a sink there soon." Wonderful caves are by these means being frequently discovered, and they abound most in Western Florida. —*All the Year Round.*

Selected.

SAFE IN JESUS.

There is an unsearchable joy
In seasons of conflict and woe,
Which nothing but sin can destroy,
And nothing but Christ can bestow.
There's a light that illumines and cheers
The lone and the desolate place,
And gilds the dark valley of tears
With the rainbow of covenant grace.

There's a strength that upholdeth the weak,
There's a hand which releases the bound,
There's a promise for all who would seek,
There's a glory for all who have found.
There's a Rock all storms can withstand,
An anchorage safe for the tossed,
For the wrecked there's a Life-boat at hand,
A Saviour for them that were lost.

Though the harbour be hidden from sight
By billows of conflict and sin,
Yet the Life-boat is steering aright,
And will bear us triumphantly in.
The promise has ever sufficed,
That nothing shall hurt or appall;
We have ventured our all upon Christ,
And shall prove Him sufficient for all.

Selected.

UNCHANGING LOVE.

"Herein is love."—John iv. 10.

Alas! my love hath ebbed so low,
I scarce can tell if love it be;
And yet—O wond'rous grace!—I know,
That Christ loves *me*.

I scarcely know if He be mine,
And yet I feel a secret bliss,
Which tells me, by a touch Divine,
That I am *His*.

I cannot comprehend such love;
I cannot search its hidden springs;
And yet it seemeth to reprove
All questioning.

It knows no turning nor decline,
No cloud nor shadow, hope nor change,
My blessed Lord! such love as Thine
Is passing strange.

It flows from depths unsearchable,
A priceless gift, unbought, unearned;
It flowed unsought,—it floweth still,—
Still unreturned.

If aught could turn such love aside,
It could not rest on me one hour.
He chose His church—He loves His bride
Without a dower!

Amount of labour expended in military operations.—We have heard of the military engine christened "Swamp Angel." Col. Serrel, who superintended the construction on which it was mounted, said it required 7000 days' work, and exposure to constant fire from numerous rebel batteries as soon as the work appeared above the grass. It stands on the very softest of mud, twenty-two feet deep, so that a man will sink out of sight if he attempts to walk on it. Ten thousand bags, filled with sand, were carried more than two miles, and 300 large logs and pieces of timber more than ten miles, to make the battery. Two miles and a half of bridges across the marsh had to be built to get to and from the batteries.—*Late Paper.*

The Causes of Failure in Submarine Telegraph Cables.—An article in the *London Times* states several important facts in reference to the causes of failure in various submarine telegraph cables, and in respect also to the precautions now taken to prevent future similar disasters.

"Every operation in submarine telegraphy—even the great Atlantic line—has contributed its quota of valuable experience; for, though successfully laid by Sir Charles Bright and his assistant engineers, in spite of its imperfect construction, it was *destroyed by the injudicious electrical treatment it received after submersion.* This fact is now so well established that the cause of the failure of the Atlantic cable may be considered as set at rest forever. The insulation of that line was not very perfect, as may be imagined from the infancy of the science at that time, but yet the electrical power used was such as would infallibly break down even the most perfect cables manufactured at the present day. Of this our readers may judge when it is stated that the large induction coils first used in signalling between England and America were probably equal in electrical power to 2000 battery cells, while now it is found inexpedient to use more than two or three cells in working the longest submarine lines in existence. Some of this great power was no doubt used in the vain hope of forcing signals through the line at a greater speed than the very slow and unremunerative rate at which it has alone been found possible to communicate through an unbroken length of 3000 miles. The result was disastrous, but the experience though dearly bought, has proved of great value. It has taught electricians the value of moderating the power used in working lines, and above all has pointed out the imperative necessity of having no single section of a submarine line of more than six hundred miles in length. To lay long submarine cables in a continuous length without intermediate stations, has been found to answer no other purpose than that of greatly diminishing the speed of working and multiplying every imaginable risk both of manufacture and submersion. The Indian government, acting under the judicious counsel of their scientific advisers, have wisely determined to divide the Persian gulf cable into three sections, though its total length will not exceed 1500 statute miles."

The Red Sea line was destroyed by faults of another character. Being laid without any allowance for slack, that the cable might conform the more readily to the irregularities of the bottom, the suspended portions became loaded with barnacles and coral, and crumbled from its own weight.

"To obviate this cause of danger, which in the above mentioned lines has probably occasioned a loss of property to the value of over a million sterling, the Persian gulf line is cased in twelve No. 7 gauge hard-drawn iron wires, thickly galvanized, so as effectually to prevent their corrosion. But, in order to secure more effectually the permanent stability of the line, the whole finished cable is thickly coated with two servings of tarred hemped yarn, overlaid with two coatings of a patent composition invented by Charles Bright and Latimer Clark. The composition consists of mineral pitch or asphalt, Stockholm tar and powdered Silica, mixed in certain proportions, and laid on in a melted state. While yet warm, it is passed between circular rollers, which give it a round, smooth surface. When quite cold this forms a massive covering of great strength and perfect flexibility, totally impervious to water, and incapable of being destroyed by the minute animalculæ which exist in such abundance in

warm latitudes, and which, when the cable is not protected against their attacks, eat every atom of hemp, as in the case of the cable laid between Toulon and Algiers."

Another important fact is stated, that wire varies greatly—as much as fifty or sixty per cent.—in its capacity for conducting electricity. The cable for the Persian gulf is so well selected, and so well protected by gutta percha and compound, that the loss by leakage is scarcely appreciable by the most delicate instruments. To such minute perfection has the system of testing adopted by the engineers been carried, that the loss of one thousandth-millionth part of the current by leakage, would be detected and estimated. The cost of this submarine section will exceed $1,500,000.

For "The Friend."

Circular of the Bible Association of Friends in America.

In again calling the attention of Auxiliaries to the Annual Queries to be answered previous to the general meeting of the Association in the Fourth month, the Corresponding Committee would press upon Friends, who have been engaged in the distribution of the Holy Scriptures, the importance of furnishing full and accurate answers to *all* the Queries, and of forwarding their report *seasonably* to the Depository.

It may be recollected, that in making donations to Auxiliaries, the board are guided in deciding what number of Bibles and Testaments shall be sent to each, by the information given in its report. Hence those Auxiliaries that do not report in time, are liable to be left out in the distribution.

Specific directions should be given in every case, how boxes should be marked and forwarded; *and their receipt should always be promptly acknowledged.*

Address John Richardson, No. 116 N. Fourth Street, Philadelphia.

CHARLES YARNALL,
SAMUEL BETTLE, JR.,
JEREMIAH HACKER,
Committee of Correspondence.

Philada., Second mo., 1865.

QUERIES.

1. What number of families or individuals have been gratuitously furnished with the Holy Scriptures by the Auxiliary during the past year?
2. What number of Bibles and Testaments have been sold by the Auxiliary within the past year?
3. How many members, male and female, are there belonging to the Auxiliary?
4. What number of families of Friends reside within its limits?
5. Are there any *families* of Friends within your limits not supplied with a copy of the Holy Scriptures in good clear type, and on fair paper; if so, how many?
6. How many *members* of our Society, capable of reading the Bible, do not own such a copy of the Holy Scriptures?
7. How many Bibles and Testaments may probably be disposed of by sale within your limits?
8. Is the income of the Auxiliary sufficient to supply those within its limits who are not duly furnished with the Holy Scriptures?
9. What number of Bibles and Testaments would it be necessary for the Bible Association to furnish gratuitously, to enable the Auxiliary to supply each family?
10. What number would be required in order to furnish each member of our religious Society, capable of reading, who is destitute of a copy, and unable to purchase it?
11. How many Bibles and Testaments are now on hand?

The great rise in paper and other materials required in manufacturing books, has made it necessary for the present, to change the price of the Bibles and Testaments published by the Bible Association of Friends in America. The Reference Bible, bound in sheep, patent back, is now $2; the school Bible, 60 cents; the 12mo. Testament, half bound, sheep, 35 cents, and Testaments and Psalms, plain sheep, 50 cents; others at proportional rates.

Remarkable Deposit of Rock Salt in Louisiana.—One of the facts of scientific interest brought to light during the pending civil war, is the discovery of an important deposit of rock salt, of remarkable purity, on the island of Petite Anse, in Vermillion Bay, on the Gulf coast of Louisiana. The island is a body of very productive land in every part, of undulating surface, growing rich crops of sugar-cane, corn, forest-trees, shrubbery, &c., and rises to the height of about 170 feet, in the midst of a wide spreading sea swamp, and is about two and a half miles long from north to south, and about one and a half mile wide. The soil of the island is an umber-coloured argillaceous loam, capable of forming good bricks. The salt deposit is found near the southwesterly border of the island, under dry forest ground, which ground is only about fifteen feet above the level of the tide water in the bayou. The salt quarry consists of a whitish or cream coloured solid smooth rock, underlying the earth, within a space, so far as yet ascertained, of about forty-five acres, and on an average of nineteen and a half feet below the surface of the earth, and about four and a half below the surface of the bayou or tide-water.

There is no water or brine moisture within the salt deposit. The rock is hard, compact, and perfectly dry. The only moisture attending it is contained in the earthy soil above the rock.

The salt was discovered as follows: salt springs were recognized on the island as far back as 1791, and from time to time subsequently. Salt was manufactured from their water by evaporation. In May, 1862, the proprietor endeavoured to improve one of the springs, and if possible to find a better supply of brine by digging much lower into the earth; and when only about thirteen feet below the surface, the pickaxe man at the bottom struck upon, as he thought, a cake of ice, but this upon being examined, proved to be nearly pure rock salt.

A writer in the New Orleans *Era*, describes the appearance of the mine as follows: "As we neared the saline bed, we could see through the scattered trees and bushes white heaps of the quarried rock salt, stacked up in piles ten to fifteen feet high, and short distances apart; giving evidence of the wells or shafts excavated within the earth below, and adjacent to these several piles of quarried blocks of salt.

"The wells or shafts for the blasting and excavating this rock deposit are about twelve in number, of different sizes, and located within a radius of about four hundred feet. They consist of a square or oblong excavation down from the surface into the earth—a depth on the average of about nineteen and a half feet below the surface—to the hard, smooth, rock salt deposit below. From all these pits there has been excavated more or less salt, down into the rock to a depth of from ten to thirty-five feet below its surface. The salt is so compact as to require a drill and powder blast for its excavation; the quantity appears to be inexhaustible.

Anecdote of Archbishop Usher.—A friend of Archbishop Usher frequently urged him to write his thoughts on sanctification; which at length he agreed to do; but a considerable time elapsing, without the promise being executed, his friend again reminded him of it. The bishop replied to this purpose: "I have not written, and yet I cannot charge myself with a breach of promise, for I began to write; but when I came to treat of the new creature which God formeth by his own Spirit in every regenerate soul, I found so little of it wrought in myself, that I could speak of it only as parrots, or by rote, but without the knowledge of what I might have expressed; and therefore, I durst not presume to proceed any further upon it." Upon this, his friend stood amazed to hear so humble a confession from so eminent a person; the bishop then added, "I must tell you, we do not well understand what sanctification and the new creature are. It is no less than for a man to be brought to an entire resignation of his own will to the will of God; and to live in the offering up of his soul continually in the flames of love, as a whole burnt offering to Christ; and oh! how many who profess christianity are unacquainted, experimentally, with this work upon their souls!"

Curiosities of Coal Mining.

From the last volume of the "Transactions of the North of England Institute of Mining Engineers," we derive the following interesting information relative to what may properly be termed the "curiosities of coal mining."

"What is called Murton Pit, not far from Durham, is remarkable for the difficulties overcome in sinking to the coal. In the process of excavation, the sinkers encountered probably the largest body of water ever met with in any one mining adventure. The estimated quantities seem incredible. No less than nine thousand three hundred gallons of water were lifted every minute from a bed of quicksand which lay at a depth of five hundred and forty feet from the surface. This bed was forty feet in thickness, and for its whole extent thoroughly saturated with water. Any person may conceive of the difficulty of sinking through such a quicksand. To encounter and defeat not far short of ten thousand gallons of flooding springs, minute after minute, and day after day, might well have appalled any engineer. But the engineer fought the floods with their own weapons: he made use of the vapor generated from water—steam—and added horse power to horse power; until in all he placed steam engines around that one pit to the extent of no less than one thousand five hundred and eighty horse power. Night and day those pumping engines were at work in pumping up the floods; cranks, crabs, and all kinds of requisite engineering were added, and the water was obliged to give in, or rather, to come out. Murton colliery is now a thriving concern, and sends up tubs of coal instead of gallons of water every minute to the surface. But at what cost was this water pumped out? At an expenditure of no less than $2,000,000.

"It is remarkable that in another sinking for coal, about a couple of miles from the same locality, the same enemy was again encountered, and in a continuation of the same bed of quicksand. The colliery-viewer however, conducted his campaign so adroitly that he was able to insulate each separate 'feeder' of water as it was met with in each stratum of sand and limestone: so that, while an aggregate amount of upwards of five thousand gallons of water per minute was met with in passing through the various beds, so cleverly was the whole passage accomplished that at no time were there more than five hundred gallons in one minute to pump away. This indeed was a quantity sufficient to frighten some; but in comparison with the nine thousand and odd gallons at Murton it was nothing.

"There are pits where, long after coal has been for many years extracted from them, the waters

break in and flood the mine. In these instances, again, great enterprise is manifested. In the case of the 'drowned' colliery at Jarrow, an attempt was made a few years ago to draw off the water and to resume ordinary operations. But the sum of one hundred and ten thousand dollars was spent fruitlessly in this attempt, and it was ultimately abandoned without drawing up a single ton of coal.

"Whence all this subterranean water comes is an interesting question, but scarcely capable of receiving a satisfactory reply. Its amount must be immense to afford nearly ten thousand gallons per minute at one sinking, and probably it is the accumulation of numberless centuries of surface waters which have percolated through the porous strata. It is always threatening, and never materially diminished, as respects its vast aggregate, by any efforts of man; on the contrary it is always gaining on man and filling up his excavations. No less than thirty-six collieries near the river Tyne, have been, in mining phrase, 'drowned out,' or rendered unworkable by an irresistible irruption of water, after the best main Wallsend seam had been nearly exhausted. These stand in the coal districts like closed factories in the cotton towns, with this difference, that the cotton factories may be reopened and busily at work again, while the drowned collieries are probably drowned for all future time."

For "The Friend."

The following communication published in the seventh volume of "The Friend," page 356, it is thought might be profitably revived at this time. Are there not some, who are spending their money in "useless toys and trinkets," who would be willing to devote the sum thus expended to the relief of their suffering fellow-creatures, and would not such a course be productive of more true pleasure than can be derived from adorning the frail tenement of clay with gold or costly apparel?

COMMUNICATION.

Eighth month 8th, 1834.—Paid to Lloyd Mifflin, treasurer to the "Young Men's Colonization Society of Pennsylvania," the sum of four dollars, the product of "a golden chain which" the owner had "made use of for mere ornament."

This chain was conveyed to me Fifth month last, in an anonymous letter, with the following instructions; "I have just read in 'The Friend,' an appeal to the benevolent on behalf of the slaves of Dr. Hawes. With the feeling of a strong desire that means might be afforded for their desired removal to Liberia, came the query, how were they to furnished, if all should be content with merely the stir of benevolent feeling, unaccompanied by any act to aid in the plan proposed. So it, (the chain,) is freely offered to Beulah Sansom to dispose of for the benefit of said slaves."

The preceding laudable example is calculated to lead the reflecting mind to consider how much good might be done in the present day, if it were customary to appropriate our useless toys and trinkets to charitable purposes. B. S.

Efficacy of Lightning Conductors.—M. Quetelet, in commenting on a remarkable thunder-storm that raged over a considerable part of Belgium, in February, 1860, states that in his statistics of the buildings or vessels struck by lightning, "he found that out of a hundred and sixty-eight cases in which lightning-conductors had been struck, only twenty-seven, by reason of grave defects in their formation, had failed to exercise a preservative power."

For "The Friend."

In No. 22 of "The Friend," is narrated the occupancy of a Friend's meeting-house in England, by Episcopal clergymen, for the purpose of holding a prayer meeting. The "British Friend," from which the account was obtained, describes the incident as "a most unusual and unprecedented application from such a source," but does not disapprobate the permission which was granted by the monthly meeting.

Friends' discipline against countenancing a hireling ministry, has been strict from an early period. No one of our testimonies has produced greater suffering, by its faithful maintenance than this. We of the present day, can scarcely realize the sufferings of our early predecessors, inflicted mainly, through the direct or indirect instrumentality of a hireling priesthood. We have for so long a period enjoyed an exemption from ecclesiastical demands and usurpations, that it is difficult for some to comprehend the necessity of so strict a discipline against countenancing a hireling ministry.

But early Friends, upon whom fell the vindictive ire of an exasperated and intolerant priesthood, felt the necessity of guarding their members against all complicity with the practices of an order, which has in all countries been persecutors or oppressors, whenever the power and the opportunity to do so, have presented.

In every age since the rise of our society, and in every country whose laws permit, they have been, and yet are the oppressors of Friends. This uniform hostility on the part of the clergy, has its origin in the essential distinction, that while we scrupulously practise and teach in accordance with the precept of the Divine Master, "Freely ye have received, freely give," the clergy with but few exceptions, derive their entire temporal support, from their ministerial, salaried labours.

Friends' testimony therefore against a salaried ministry, impinges directly upon their means of temporal subsistence, and is also a standing protest against the anti-christian practice of "preaching for hire and divining for money." And though by the interposition of law, their power to persecute has been abated in many countries, yet we perceive that where the law authorizes the collection of tithes, the clergy hesitate not to avail themselves of the opportunity, to the full extent of the sanction afforded by government.

The Yearly Meeting of London, from an early period, has been in the practice of recording the sum, distrained from Friends within its limits, for tithes and other ecclesiastical demands. Assuming the reports of the last fifty years as a criterion in part, and taken in connection with other historical incidents, we are warranted in the conclusion, that the amount thus extorted from Friends during the past two hundred years, is not less than fourteen million dollars. This does not include the twenty years immediately after the rise of Friends, during which the clergy, and their tithe-gatherers, havocked upon Friends' property without restraint, taking in some instances, from five to ten times more property than the tithes demanded.

In regard to the corporeal sufferings endured by early Friends, history shows that they were mainly inflicted through the instigation of the clergy. Within seventeen years after the restoration of Charles II, more than two hundred Friends perished in jails and dungeons, in many instances among felons and murderers, and amid filth and destitution. The total number of those who thus sickened and languished and died, were probably not less than six hundred.

In view of the foregoing, is it not a duty we owe our children and the younger part of society, to early instruct them in the doctrine of the incompatibility of a hireling priesthood with the pure principles of christianity, as professed by Friends.

The suffering endured by early Friends is frequently and impressively alluded to in ministerial communications, but many are probably unaware, that these manifold sufferings were to a great extent instigated by the clergy. When the youthful Parnell was arrested, his examination was conducted in the presence of three magistrates, and four clergymen. Who can read without emotion, the pathetic account of this noble martyr, who at the early age of twenty years, after great sufferings in a cold damp dungeon, lying upon bare stones, perished a victim to the relentless persecution of a cruel, inexorable priesthood.

If the younger part of our society were appropriately instructed in relation to this subject, I have sometimes been ready to inquire, whether it would be possible any among them would cast so great an indignity upon the christian testimony against a hireling ministry, as to invoke the aid of a clergyman, in the accomplishment of their marriage?

Do not the clergy generally, advocate or acquiesce in the doctrine of the christian legality of war, oaths, tithes and a hireling ministry? do they not profess or believe that revelation has ceased, that the scriptures are the only rule of faith and practice, and that there is no necessity for a Divine qualification for a gospel minister?

Is not the lending of Friends' meeting houses, for the purpose of enabling them to conduct their religious exercises, an implied acknowledgment of their ministry, and an indirect approval of their religious belief and practices?

Is it appropriate for Friends thus, even indirectly, to countenance principles and doctrines, which our early predecessors regarded as of so anti-christian a character, that they believed it their religious duty to testify against them, even at the peril of their property, their liberty and their life? G. F.

Self-Help.

(Continued from page 186.)

Wedgwood called to his aid the crucible of the chemist, the knowledge of the antiquary, and the skill of the artist. He found out Flaxman when a youth, and while he liberally nurtured his genius drew from him a large number of beautiful designs for his pottery and porcelain; converting them by his manufacture into objects of taste and excellence, and thus making them instrumental in the diffusion of classical art amongst the people. By careful experiment and study he was enabled to re-discover the art of painting on porcelain or earthenware vases and similar articles, —an art practised by the ancient Etruscans, but which had been lost since the time of Pliny. He distinguished himself by his own contributions to science, and his name is still identified with the pyrometer which he invented. He was also an indefatigable supporter of all measures of public utility; and the construction of the Trent and Mersey Canal, which completed the navigable communication between the eastern and western sides of the island, was mainly due to his public-spirited exertions allied to the engineering skill of Brindley. The road accommodation of the district being of an execrable character, he planned and executed a turnpike road through the Potteries, ten miles in length. The reputation he achieved was such that his works at Burslem, and subsequently those at Etruria, which he founded and built, became a point of attraction to distinguished visitors from all parts of Europe.

The result of Wedgwood's labours was, that the manufacture of pottery, which he found in the very lowest condition, became one of the staples of England; and instead of importing what we needed for home use from abroad, we became large exporters to other countries, supplying them with earthenware even in the face of prohibitory duties on articles of British produce. Wedgwood gave evidence as to his manufactures before Parliament in 1785, only some thirty years after he had begun his operations: from which it appeared, that from providing only casual employment to a small number of inefficient and badly remunerated workmen, there were then about 20,000 persons deriving their bread directly from the manufacture of earthenware, without taking into account the increased numbers to which it gave employment in coal-mines, and in the carrying trade by land and sea, and the stimulus which it gave to employment in many ways in various parts of the country. Yet, important as had been the advances made in his time, Wedgwood was of opinion that the manufacture was but in its infancy, and that the improvements which he had effected were of but small amount compared with those to which the art was capable of attaining, through the continued industry and growing intelligence of the manufacturers, and the natural facilities and political advantages enjoyed by Great Britain; an opinion which has been fully borne out by the progress which has since been effected in this important branch of industry.

Not to speak of Spode, Davenport, Ridgway and others, equally distinguished, we may briefly notice the late Herbert Minton, as actively taking up the work at the stage Wedgwood left it, carrying the manufacture on to new triumphs, and greatly extending this branch of industry. Minton was not so much a highly educated man, nor an economist, nor inventor, as characterized by the inexhaustible activity and ceaseless energy which he brought to bear upon the creation of a colossal business, employing some 1,500 skilled artisans. He possessed a clear head, a strong body, rare powers of observation, and great endurance; he was, besides, possessed by that pride and love of his calling without which so much perseverance and devotion to it could scarcely have been looked for. Withal he was kindly and genial, commanding hosts of friends and co-operators; his rivals themselves regarding him with admiration, and looking up to him as the prince of his order. Like Wedgwood, he employed first-rate artists,—painters in enamel, sculptors, designers of flowers and figures,—and sparing neither pains nor expense in securing the best workmen, whether English or foreign. The talents of the men employed by him were carefully discriminated and duly recognized, and merit felt stimulated by the hope of promotion and reward. The result soon was that articles of taste, which had formerly been of altogether exceptional production, became objects of ordinary supply and demand; and objects of great artistic beauty, the designs of which were supplied by the best artists, were placed within reach of persons of moderate means. The quality of the articles manufactured at his works became so proverbial, that one day when Pickford's carrier rudely delivered a package from his cart at the hall-door of an exhibition of ceramic manufactures, and the officer in waiting expostulated with the man on his incautious handling of the package, his ready answer was: "Oh, never fear, sir; it's Minton's, it won't break."

It is not a little remarkable that Minton, by his unaided energy and enterprise, and at his own risk, was enabled successfully to compete with the Sèvres manufacturers of France, which are produced by the coöperation of a large number of talented men, and the assistance of almost unlimited state funds. In many of the articles exhibited at Paris in 1851, Minton's even excelled those of similar character produced at the Imperial manufactory. In hard porcelain also, he outvied the best specimens of Meissen and Berlin ware; in Parian, he was only approached by Copeland; whilst in the manufacture of encaustic tiles he stood without a rival. In perfecting these several branches Minton had many difficulties to encounter and failures to surmount, but with true English energy and determination to succeed, he surmounted them all, and at length left even the best of the ancient tiles far behind. Like Wedgwood, he elevated the public taste, introduced beautiful arts into the homes of the people, and by founding new branches of industry, mainly by his energy and ability, he nobly earned the claim to be regarded as a great national benefactor.

Men such as these are fairly entitled to rank among the heroes of England. Their patient self-reliance amidst trials and difficulties, their courage and perseverance in the pursuit of worthy aims and purposes, are no less heroic of their kind than the bravery and devotion of the soldier and the sailor, whose duty and whose pride it is heroically to defend what these valiant leaders of industry have as heroically achieved.

(To be continued.)

Poisonous Tobacco.—The Philadelphia *North American* has been shown a sample of army tobacco, brought from the front, one third proportion of which proves to be sumac. This article is worth about sixty dollars a ton. A like quantity of tobacco would cost some hundreds of dollars. The sumac is dried, and afterward saturated in a strong decoction of waste tobacco. It is then incorporated into the genuine article, and in that shape is furnished to soldiers. The cause of complaint is less on account of the cheat than on account of the deleterious effects of adulteration. The sumac produces ulceration of the mouth in all cases, and not unfrequently terminating in cancer. To detect the adulterated article is almost impossible. The sumac can be so mingled with smoking tobacco that it cannot be separated or even distinguished from it. Our advice is, stop using the weed.

Boring for Oil.—Oil wells are not bored, though we continually hear that the oil springs are reached by boring. The drilling process has heretofore been used. But an experiment is now making in Venango county with a boring instrument of French invention, which is said to be very successful, and is likely to work an important revolution in the business of striking oil. The implement used is circular and hollow, and set with diamond-shaped teeth of hardened steel. It is connected by an iron rod to beveled cog-wheels, attached by cranks and rods to the walking-beam of the engine. It revolves rapidly, cutting its way down and leaving a central core standing, which, at intervals, is cut off and taken out by a clamp. This core exhibits the stratification of the rock, and will settle some vexed questions of strata not to be ascertained by the ordinary method of drilling. The boring has proceeded at the rate of four inches in five minutes, or ninety-six feet per day. A correspondent who has witnessed the operation writes: "The manager says he can cut five hundred feet in ten days, and guarantees to do it in twenty days. He has taken the contract at the usual price for boring."—*Phila. Ledger.*

THE FRIEND.

SECOND MONTH 18, 1865.

The recent visit of informal commissioners from the rebel authorities at Richmond, and the interview granted them by the President of the United States, raised hopes of the suspension of hostilities, and a speedy return of peace, without further waste of human life. But from the accounts of the conférence published by both parties, and the subsequent expression of feeling by the respective belligerents, it is evident that this great boon is not yet to be vouchsafed to the nation, and that the sword is to be allowed to devour still longer. This, however, cannot go on forever, and the whole people, North and South, are feeling keenly what bitterness accompanies its murderous award.

It is impossible to calculate with precision or certainty the resources which the rebels can yet command, or how long or how desperately they will resist complete subjugation. But though past experience would indicate that, unless the extremity of suffering and the desire for peace overcome the promptings of pride and hatred in a large majority of them, the contest will probably be prolonged for an indefinite period, notwithstanding the greater portion of their country may be overrun by the armies of the United States, yet there are not a few of their recent movements that lead us to hope that better counsels are beginning to prevail among them, than those that have heretofore betrayed them into immeasurable suffering. We trust that Divine Providence, in his mercy and pity towards the whole nation, will open the eyes of the misguided leaders of the insurgents to see the awfulness of the destruction they appear to be courting, and turn their hearts from their wicked determinations, that so the effusion of blood may be stopped, and the people allowed to return to their former peaceful pursuits under one government, recognized and obeyed by all.

It can hardly be possible but that the most prejudiced and determined slaveholders see, that their iniquitious system must be given up; that even if the general government could be induced to forego the present opportunity for eradicating it, the few States where it exists could not protect it from assault, nor secure it from speedy overthrow; and, therefore, however they may lament their supposed loss, and execrate the means employed to inflict it upon them, it is no longer a cause for a civil war, which, if continued unchecked, bids fair to sweep whatever else of material possessions they value, into the same destructive vortex. Slavery being removed, the State rights so hotly contended for, are of but little value, for those most insisted on, owe the importance attached to them principally to the power claimed under them to maintain, defend and extend chattel bondage. These two principal causes of this wicked war being removed, and the chastisement received by the whole nation having been so severe, and necessarily to be felt for a long time to come, we are encouraged in the hope that the end of the bloody staife is not very far off, and that the avenging angel will, ere long, receive the command to stay the overflowing scourge. The effectual, fervent prayer of a righteous man availeth much, and we doubt not many such prayers reach the ear of Him who hath all power, and pitieth the erring workmanship of his hand.

SUMMARY OF EVENTS.

FOREIGN.—News from Europe to the 29th ult. No American news had reached England for a week, and consequently the papers are unusually silent on Ameri-

can affairs. The *Times* publishes a letter from a London merchant recently from Savannah, in which he says blockade running was about played out. What remains will soon be confined to the confederate government. The Times, in an editorial, strongly opposes any more arctic expeditions. The case of Captain Corbet, of the Shenandoah, has been removed for trial to the Court of Queen's Bench, and the amount of bail doubled. The sales of cotton in the Liverpool market for the week, amounted to 35,000 bales. The market had a downward tendency. Fair Orleans was quoted at 26*d*.. Middling uplands, 23½*d*. The market for breadstuffs quiet but steady. Red wheat, 7*s*. 9*d*. a 8*s*. 4*d*. per 100 lbs. White wheat, 8*s*. a 9*s*. Consols, 89¾. The Bank of England has reduced the rate of discount to 5 per cent.

The Bank of France had gained four millions of francs specie in a week. In the Spanish Senate, Marshall O'Donnell said the evacuation of San Domingo was an accomplished fact. He said he would have guarantied to put down the rebellion in three months, and was still ready to do so if the queen wished it. The expense of the San Domingo affair to Spain was two hundred million reals, besides a deficit of a hundred millions in the revenue of Cuba.

Late Mexican advices show that the Imperial forces were concentrating about Oaxaco, and would probably capture the place. The State of Jalisco has thrown off the yoke of the Imperialists. Reports of revolutions in the city of Mexico, though denied officially, continue to be circulated. The Juarists had attacked Toluca, and captured the town of Anatepec. The Imperialist General Vega was defeated and killed at El Fuerte in Sinaloa. The Imperialists were able to hold the city of Zacatlan for only three days.

United States.—*The Peace Conference.*—The three Commissioners appointed by Jefferson Davis to seek an informal conference with the President of the United States state, in their report to the rebel President, that "the conference was granted and took place on the 30th ult., on board a steamer anchored in Hampton Roads, where we met President Lincoln and the Hon. Wm. H. Seward, Secretary of State of the United States. It continued for several hours, and was both full and explicit. We learned from them that the message of President Lincoln to the U. S. Congress, in December last, explains clearly and distinctly his sentiments as to the terms, conditions and methods of proceeding by which peace can be secured to the people; and we were not informed that they would be modified or altered to obtain that end. We understand from him that no terms or proposals of any treaty or agreement looking to ultimate settlement, would be entertained or made by him with the authorities of the confederate States, because that would be a recognition of their existence as a separate power, which under no circumstances would be done, and for like reasons, that no such terms would be entertained by him from States separately; that no extended truce or armistice would be granted or allowed without satisfactory assurance in advance of the complete restoration of the Constitution and Laws of the United States over all places within the States of the Confederacy." In Secretary Seward's account of the conference, he says, there was no attendance of clerks or witnesses, and nothing was written or read. The conversation, although earnest and free, was courteous, and kind on both sides. "The Richmond party approached the subject rather indirectly, and at no time did they make categorical demands, or tender formal stipulations or absolute refusals; nevertheless, during the conference, which lasted four hours, the several points at issue between the government and the insurgents were distinctly raised, and discussed fully, intelligently and in an amicable spirit." The rebel commissioners pressed for a suspension of hostilities for a season, during which "passion might be expected to subside, the armies be reduced, and trade and intercourse between the people of both sides be resumed." They did not say that in any event or any condition they would ever consent to reunion, and yet they equally omitted to declare that they would not consent.

The Abolition of Slavery.—The delegates from the territories of Colorado, Utah, Nebraska, Arizona, Dacotah, Idaho and New Mexico, which being as yet without State organizations, and not entitled to votes on this subject, have sent a communication to the House of Representatives expressing their warm approval of the proposed amendment to the Constitution. The amendment has been recently ratified by the following additional States. Kansas, by an unanimous vote, Ohio, by large majorities, East Virginia, by the legislature meeting at Alexandria, Maine and Missouri. The amendment has been ratified by the Indiana Senate and will doubtless be by the House of Representatives. The only State which has thus far rejected the amendment is Delaware, almost the smallest of them all, and having very few slaves within its limits.

Congress.—Among the subjects which have claimed the attention of Congress, are the army appropriation bill, and the fortification bill, (both of which passed the House of Representatives,) the enrollment bill, the amendatory internal revenue bill, &c. A bill has passed the Senate making important changes in the postal laws. On the 8th inst., the formality of counting the electoral votes for President and Vice-President took place. The members of the Senate entered the hall of the Representatives, and the ballots were opened and counted in the presence of both Houses. Abraham Lincoln was declared to be elected President, and Andrew Johnson Vice-President. A bill to establish a mail steamship service between the United States and China, has passed the Senate.

The Schools of New York.—The number of children in this State, between 5 and 21 years of age, is said to be 1,308,822, of whom 881,184 attended school last year. There are 11,712 public schools, and 1490 private schools in the State.

Michigan, in 1810, had a population of 4,762, in 1820, 8,765, in 1830, 31,639, in 1840, 212,267, in 1850, 397,654, in 1860, 749,113, in 1864, 803,745. The northern portion of the State has still but few inhabitants, the great bulk of the population being located in a few counties along the lines of the railways in Southern Michigan.

Philadelphia.—Mortality last week, 376. Of consumption 61; inflammation of the lungs, 17; scarlet fever 25; typhus and typhoid fever 28; small pox 21. Deaths and interments of soldiers, 16. Early in the morning of the 8th inst., a fire broke out in a depot for the storage of petroleum on Washington Avenue, west of Ninth St. The quantity stored here was very large, and its ignition gave rise to the most disastrous conflagration which has occurred in this city for many years. More than fifty houses were destroyed, and about twenty persons appear to have perished in the flames.

The War.—The Richmond *Dispatch* of the 10th says, that a report prevailed that Charleston had been evacuated, but that it could not be traced to any official source. From dispatches published in the Richmond papers, it appears that Sherman's forces were on the line of the railroad from Charleston to Augusta, and it was believed that Branchville had been captured by them. Two corps of Hood's army have been sent to South Carolina. Another blockade runner was recently destroyed off Charleston. Gen. Gilmore has been restored to command at Hilton Head, and General Foster relieved. On the 5th and 6th inst. Gen. Grant advanced a part of his forces on the Vaughn road and succeeded in crossing at Hatcher's run, driving back the rebel troops after a severe contest. By this movement several miles of ground were gained, but at the cost of about 1200 men killed and wounded, and 200 missing. According to the Richmond papers, the rebel loss in this struggle did not exceed five hundred men. Gen. Grant has made an arrangement with the rebel authorities for the exchange of prisoners, man for man, and officer for officer, according to the old cartels, until one or the other party has exhausted the number held by them. Gen. Grant supposes that the exchanges can be made at the rate of three thousand prisoners a week. The number of sick and wounded soldiers in the various military hospitals of the United States is about 79,000.

Southern Items.—On the 19th inst. large meetings were held in Richmond to take action on the terms of peace lately offered by President Lincoln. Gilmer of North Carolina, and others made speeches glowing with war and resistance, and resolutions of a kindred character were passed. The Secretary of State earnestly advocated the employment of negro soldiers. General Forrest also recommends the arming of 200,000 slaves. The rebel Senate, by an almost unanimous vote, has rejected the bill putting 200,000 negroes into the southern army. The Canton, Miss., *Citizen* intimates that probably no further efforts will be made by the confederates to hold the country between the Yazoo and Big Black rivers, or to protect the Mississippi Central railroad, but that the rebel lines will be moved further east to hold the Mobile and Ohio railroad if possible.

The Markets, &c.—The following were the quotations on the 13th inst. *New York.*—American gold 205 a 207 United States six per cents, 1881, 110½; ditto, 5-20, 109½; ditto, 5 per cents, 10-40, 102½. Specie in the N. York banks, $20,297,346. The loan market easy at 6 per cent. Balance in the N. York Sub-Treasury, $30,500,916. Superfine State flour $9.50 a $9.80. Shipping Ohio, $10.90 a $11.15. Baltimore flour fair to extra, $10.75 a $11.70. For wheat, higher prices are demanded, but no sales reported. Oats, $1.06 a $1.11. Rye, $1.60 a $1.70. New corn, $1.74 a $1.76; old, $1.90. Middlings cotton, 80 a 82 cts. *Philadelphia.*—Superfine flour, $9.50 a $10; extra and fancy brands, $11 a $12. Prime red wheat, $2.50 a $2.55; white, $2.60 a $2.80. Rye, $1.70 a $1.72. New yellow corn, $1.65. Oats, 92 cts. Clover-seed, $15. Timothy, $6.25 a $6.50. Flaxseed, $3.70 a $3.80. The offerings of beef cattle reached about 1800 head, and prices were higher. Sales ranged at from $12 to $25 the 100 lb. net, for common to good and extra quality. About 2000 hogs sold at from $18 to $19.50 the 100 lb. net. Of sheep 3000 were sold at 10 a 12½ cts. per lb. gross.

RECEIPTS.

Received from E. W. Cope, Pa., $2, to No. 21, vol. 39; from N. Linton, Pa., per N. K., $2, vol. 38; from J. Austin, Agt., Mass., for Elizabeth F. Gardner, and E. Mitchell, $2 each, vol. 38; from J. Jefferis, Pa., $2, vol. 37; from F. Maerkt, Pa., $5, to No. 52, vol. 37; from E. Dean, O., $4, to No. 27, vol. 40; from I. Price and U. Price, Pa., $2 each, vol. 38.

Received, from M. Atwater, Somerset, N. Y., $17, from I. Price, Yohoghany, Pa., $6, and from Friends and others of Guernsey, O., $30, for the Relief of the Freedmen.

NOTICE.

A Stated Meeting of the "Women's Aid," will be held at 501 Cherry St., on Seventh-day afternoon, the 18th inst., at half past 3 o'clock.

E. L. Smith,
Secretary.

WESTTOWN BOARDING SCHOOL.

The Visiting Committee meet at the school on Seventh-day afternoon the 18th inst.; attend meeting on First-day, and visit the schools on Second and Third days.
Second month 14th, 1865.

For the accommodation of the Visiting Committee, conveyances will be at the Street Road Station on Seventh-day the 18th inst., to meet the trains that leave West Philadelphia, at 2 and 4.15 P. M.

WESTTOWN BOARDING SCHOOL.

The Summer Session of the School will commence on the 8th of Fifth month. Parents and others intending to send children as pupils, will please make early application to Dubré Knight, Superintendent, (address Street Road P. O., Chester Co., Penna.,) or to Charles J. Allen, Treasurer, No. 304 Arch St., Philadelphia.

☞ Attention is called to the following regulation, as disappointment has in some cases resulted from the non-observance of it, viz: "To avoid disappointment to parents, and in order to afford time for the Committee and Superintendents to make the requisite preparations for a full school, it is requested that, when practicable, applications for admission be made on or before the 1st of the Third month for the Summer Session, and the 1st of the Ninth month for the Winter Session."

WESTTOWN BOARDING SCHOOL.

A Teacher of the Arithmetical School on the boys' side, and also one for the Primary School, will be wanted at the close of the present session.

Applications may be made to
James Emlen, West Chester, Pa.
Joseph Snowdon, Haddonfield, N. J.
Jos. Scattergood, 413 Spruce St., Phila.
Chas. J. Allen, No. 304 Arch St.,

FRIENDS' ASYLUM FOR THE INSANE.

near Frankford, (twenty-third ward, Philadelphia.)
Physician and Superintendent,—Joshua H. Worthington, M. D.

Application for the Admission of Patients may be made to the Superintendent, to Charles Ellis, Clerk of the Board of Managers, No. 637 Market Street, Philadelphia, or to any other Member of the Board.

Died, on the 23d of the Seventh month, at his residence in Sadsbury Township, Chester Co., Pa., Joseph Cooper, in the 73d year of his age. He was concerned for the welfare of society, and laboured for the benefit thereof, being much opposed to the many innovations that are prevalent in the present day.—During his sickness he said but little, but remarked at one time what a favor it was to be in the quiet, and continued in that state of mind, suffering not from severe pain, but extreme weakness, he quietly passed away, from works to rewards.

WM. H. PILE, PRINTER,
No. 214 Pear street, between Dock and Third.